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09/734,716	12/13/2000	Koichiro Mizushima	041-2077	3360

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EXAMINER

NGHIEM, MICHAEL P

ART UNIT PAPER NUMBER

2863

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/734,716

Applicant(s)

MIZUSHIMA, KOICHIRO

Examiner

Michael P Nghiem

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 3-17, 24-30, 32-44 and 47-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 31 is/are rejected.
- 7) ☒ Claim(s) 2, 18-23, 45 and 46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948).
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restriction***

1. Applicant's election with traverse of Invention VI, directed to Claims 1-3, 18-26, 31-33, 45, and 46 in Paper No. 9 is acknowledged. The traversal is on the ground(s) that the Figures do not describe patentable distinct species. For example, Figs. 1-5b, Figures 11 and 12, and Figures 13-14 do not describe different species. The invention of Figs. 1-5b is not a species akin to the species of Figs. 11-12 and Figs. 13-14. This is not found persuasive because species VI of Figs. 13 and 14 does not require, e.g., a frequency analyzer (104) as shown in Fig. 2a of Species I. Further, species VI requires a velocity detection section (608) which is not required by species V of Figs. 11 and 12. Applicants further argue that the requirement for election of species has no explanation as to why certain aspects of the invention might be considered to be independent and/or distinct. There is not a single comparison between any of the listed species by the Examiner. Examiner's position is that the comparison between the species can be made by comparing elements shown in the corresponding Figures. For example, species VI is distinct from species I because Figs. 13 and 14 do not show a frequency analyzer (104) shown in Fig. 2a. On the other hand, species VI is distinct from species V because Fig. 13 shows a velocity detection section (608) not shown in Fig. 11. Finally, claims 1 and 31 are not generic claims because they recite a frequency analyzer (104) or frequency analysis step, neither supported nor shown by Figs. 13, 14

Art Unit: 2863

of species VI. If claims 1 and 31 are allowable, all dependent claims will be considered for patentability.

However, claims 1, 3, and 31-33 are directed to non-elected species I since they recite a step or device for applying frequency analysis. Claims 24-26 are directed to non-elected species V since they recite an amount of change of estimated directions is measured from an estimated direction obtained prior or subsequent to the time point at which said passage detection result.

The requirement is still deemed proper and is therefore made FINAL. Claims 3-17, 24-30, 32-44, and 47-50 are withdrawn from consideration.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. However, the priority document 11-354183 does not appear to disclose the species of Figs. 13-14. Thus, the current application for patent may NOT be entitled to the benefit of the filing date of a priority document 11-354183. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d), a translation of the foreign application should be submitted under 37 CFR 1.55 in reply to this action.

***Specification***

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 19-26, 46, a method or means comprising applying frequency analysis (species I) AND calculating the angular velocity of sound (species VI) is not supported by the specification.

***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the apparatus comprising the frequency analyzer means (species I) AND the angular amount determining means (species VI) (claim 46) must be shown or the feature(s) cancelled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Admitted Prior Art of Fig. 22 (APA).

APA discloses all the claimed features of the invention including:

- a method and apparatus for estimating a direction of a sound source (Fig. 22), as an angular value in relation to a fixed position (page 1, lines 18-20), comprising:

- in each of a succession of fixed-length time windows (dt), operating on respective microphone output signals (signals from 901, 902) resulting from reception of sound emitted from said sound source (page 1, line 19), said microphone output signals produced from an array of M (2) microphones (901, 902), where M is a plural integer (Fig. 22), to thereby extract from each of said microphone output signals a time-axis signal portion by a waveform extraction means (905) and thereby obtain successive sets of M audio signal portions with said sets corresponding to respective ones of said time windows (Fig. 22);

Art Unit: 2863

- frequency analyzer means (906) for applying frequency analysis to separate each said signal portion into a plurality of components (SA, SB) corresponding to respectively different ones of a fixed set of frequencies (via 906);

- processing means (907-910) for each frequency of said fixed set, processing said components to obtain data expressing a frequency-based direction of a sound source with respect to a position in said microphone array (velocity),

- calculating an average of respective frequency based directions (direction based on a time difference or delta time, page 2, lines 23-24) obtained for all frequencies of said fixed set (angular direction, page 3, lines 1-2), to thereby obtain an estimated direction corresponding to one time window (page 3, lines 1-3).

### ***Allowable Subject Matter***

6. Claims 2, 18-23, 45, and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Reasons For Allowance***

7. The combination or method as claimed wherein for each of said time windows, calculating an average direction as an average of an estimated direction corresponding to said each time window and respective estimated directions

Art Unit: 2863

corresponding to a fixed plurality of time windows which directly precede said each time window, and outputting said average direction as a finally obtained estimated direction corresponding to said each time window (claim 2) or judging when a sound source has passed through a specific direction, by comparing said successive estimated directions obtained for said sound source with a predetermined passage detection range of directions, and generating data expressing a passage detection result when said sound source is found to have passed through said specific direction (claims 18, 45) is not disclosed, suggested, or made obvious by the prior art of record.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Marash (US 6,198,693) discloses a system and method for finding the direction of a wave source (Fig. 1).

Kuhn et al. (US 5,798,983) an acoustic sensor system for vehicle detection and multi-lane highway monitoring (Fig. 2).

### ***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703)



Art Unit: 2863

306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-

0956.



**MICHAEL NGHIEM**  
**PRIMARY EXAMINER**

Michael Nghiem

September 1, 2003